

**ABSTRACT**

A method and apparatus are provided for adjusting a communication receiver based on the velocity of a wireless communication device in relation to a base station. The receiver is adjusted by estimating a frequency shift of a communication signal transmitted between the base station and the wireless communication device (WCD) based on the WCD velocity. Using this estimate, adjustments are made to the communication receiver to account for the frequency shift of the communication signal. Adjustments to the receiver can include adjusting frequency and time tracking loops to account for the change in frequency of a signal received by, and from, the WCD as it moves relative to the base station. The receiver may be located in the WCD, or in the network infrastructure, or in both.